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# MEDICAL CONTROL OF VIVISECTION.

BY WALTER B. CANNON, A.M., M.D.

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"A VILE pursuit," "a devilish science," "an organized system of barbarity"—this is medical research; "fiends," "demons," "human monsters"—these are the medical investigators; "torments" and "prolonged agonies"—such are the experiences of animals in the "torture-chambers" of the laboratories. Words to catch and hold rigid the ideas of men were never so industriously overworked as these expressions. One who undertakes to read much of anti-vivisection writings is wearied not so much by the monotonous recurrence of the same old stories as by the constant attempt to horrify by epithets.

That these epithets have serious implications is not questioned by anybody; but whether the persons who use them so glibly are really proper judges, qualified by any instructive experience, may be questioned with very good reason. These persons have never entered the laboratories in which they declare animals are "cruelly tortured," they have not seen the operations which they describe as "revolting." The assertion that their inexperience is due to refusal of admission to the laboratories does not alter the fact of that inexperience. Nor is the refusal to admit them a confession that their charges are true. Any one of insight and judgment is never refused admission; but the opponents of research, untrained in biological studies, and willing to sacrifice their fellow men to the comfort of laboratory animals, may reasonably be excluded, just as emotional persons are forbidden to witness an operation on a relative. The surgeon operating in the home does not permit the "open door," yet he does not become thereby the object of malignant suspicion. And the confident opinions of an outsider, concerning the surgeon's work, would not gain credence merely because expressed with unqualified assurance.

As an example of the way in which opinions on laboratory procedures and laboratory-workers become established, the story of a letter by Professor William James, widely published in the daily press last summer, is worth telling. Professor James wrote that he understood the defenders of vivisection to protest "*against any regulation whatever*" (italics original). "Their invariable contention, implied or expressed," he continued, "is that it is *no one's business* what happens to an animal, so long as the individual who is handling it can plead that to increase science is his aim." Later he declared that medical investigators, held together by powerful club opinion, deny every charge against them, concede no point of principle and sustain firmly "the preposterous claim that every 'scientist' has an unlimited right to vivisect, for the amount or mode of which no man, not even a colleague, can call him to account." Then after disapproving of State inspection, and after urging medical investigators to establish their own government, he affirmed that so long as they disclaim corporate responsibility and formulate no code of vivisectional ethics for laboratories to post up and enforce, "so long must the anti-vivisection agitation, with all its expensiveness, idiocy, bad temper, untruth and vexatiousness, continue." Professor James in his letter struck valiantly at both parties in the controversy. What a gift of ammunition he presented to the anti-vivisectionists! The assertions regarding the experimenters—their waste of animal life, their subservience to club opinion, their failure to formulate a code for their own conduct, their sense of exemption from all restraint—these assertions they carefully selected, and they have since published them extensively and repeatedly, without question, as the words of final authority. Thus are the investigators judged, classified and stamped—with doctrinaire notions of what manner of men they must be and what lives they must lead, but with no suggestion of an inquiry whether perchance the assertions may not be true.

Nearly two years ago the American Medical Association appointed a Council to investigate the conditions of animal experimentation in the medical laboratories of the United States. Through detailed reports and the testimony of an expert investigator the Council has accumulated information from every medical school in which animals are used for teaching or research. Some of the results of this inquiry should be of interest to the

intelligent and humane persons to whom the anti-vivisectionist makes his appeal.

The experimental animals whose service for medical research rouses the greatest amount of hostile sentiment are the cat and the dog. The employment of these animals has been referred to as a terrible "waste" of life. Yet compared with the number of cats and dogs officially destroyed in various cities, the sacrifice of their lives in laboratories is almost insignificant. Figures have been obtained by the Council from twenty cities, in many of which, however, the record for cats was not reported; in these cities more than 360,000 cats and dogs have been killed in a single year merely to be rid of the excess. In New York City alone during the past fourteen years more than 800,000 cats and 400,000 dogs have been thus destroyed. In one year in New York City alone there are put to death more than ten times the total number of cats and dogs used for all purposes in all the laboratories in all the medical schools of the country. The interesting question now arises whether the enormous numbers of these animals killed solely to clear the streets have their lives "wasted" more or less than the much smaller number used in the laboratories for purposes of medical advancement.

But the humane destruction of animals in a public pound, anti-vivisectionists will declare, is very different from the "prolonged agonies" which animals experience in the "secret chambers" of the laboratories. Thus the habitual words assert their dominance. "Behind locked doors, where no one may enter," the "brutalized" experimenter, quite regardless of the "cries of pain and anguish" which assail his ears, is supposed to undertake his "hellish" work. "With unlimited right to vivisect, for the amount or mode of which no man, not even a colleague, can call him to account," he continues his "butchery." Before giving full credence to the implications of these charges against honorable men patiently searching out the nature of disease and its treatment, we might do well to learn the actual conditions of research, and the precautions taken by the medical profession itself to minimize suffering in laboratory animals.

In the largest medical laboratories of this country regulations governing animal experimentation have been posted and enforced, in one instance for more than thirty years, in other instances for more than ten years. These regulations, discovered by the Coun-

cil of the American Medical Association, have been collected, summarized and revised, and have been sent to all other laboratories in which animal experimentation is conducted. These rules are as follows:

I. Vagrant dogs and cats brought to this Laboratory and purchased here shall be held at least as long as at the city pound, and shall be returned to their owners if claimed and identified.

II. Animals in the Laboratory shall receive every consideration for their bodily comfort; they shall be kindly treated, properly fed, and their surroundings kept in the best possible sanitary condition.

III. No operations on animals shall be made except with the sanction of the Director of the Laboratory, who holds himself responsible for the importance of the problems studied and for the propriety of the procedures used in the solution of these problems.

IV. In any operation likely to cause greater discomfort than that attending anesthetization, the animal shall first be rendered incapable of perceiving pain and shall be maintained in that condition until the operation is ended.

Exceptions to this rule will be made by the Director alone and then only when anesthesia would defeat the object of the experiment. In such cases an anesthetic shall be used so far as possible and may be discontinued only so long as is absolutely essential for the necessary observations.

V. At the conclusion of the experiment the animal shall be killed painlessly.

Exceptions to this rule will be made only when continuance of the animal's life is necessary to determine the result of the experiment. In that case, the same aseptic precautions shall be observed during the operation and so far as possible the same care shall be taken to minimize discomforts during the convalescence as in a hospital for human beings.

Faculties of medical schools throughout the entire country have formally adopted the rules as an expression of the precautions under which research was being, and should continue to be, conducted. These or similar rules are now posted in practically all laboratories in which animal experimentation is extensively practised. The adoption of these rules effectively disposes of the charges that in laboratories "it is no one's business what happens to an animal," that experimenters protest against any regulation, and that they disclaim any corporate responsibility for their acts.

Power for the enforcement of the regulations is abundantly provided in the public and corporate manner in which they were adopted; and that power is reinforced by a strong "club opinion" to which the opponents of medical research have already recognized the experimenters as so perfectly loyal. Furthermore,

the potent social forces expressed in the votes of the trustees of institutions, and in the opinions of colleagues and fellow workers, not to speak of the interested public, would put effective pressure on any tendency towards infraction of these regulations should such tendency develop. As a matter of fact, however, the members of the Council, who are widely acquainted with medical laboratories, are convinced that in the great majority of instances these regulations merely define the already good conditions under which experimental medicine has been carried on and state a programme for the continuance of those conditions. To beginners in research and to interested people these regulations will indicate the spirit of the investigators and the consideration given by them to the avoidance of unnecessary pain.

Persons who have been under the spell of anti-vivisection phrases may perhaps now admit that in the laboratories of the great medical schools the condition of animal experimentation is fairly satisfactory. They will surely have the suggestion made to them, however, that there still remain the careless and inexperienced medical students who, in the secrecy of private rooms, are wholly free to satisfy their desire to operate on animals without any supervision whatever. What are the grounds for this suggestion? The uniform testimony given to the Council is that in the medical laboratories students are carefully supervised in any experiments they make on animals; indeed, except in a few places, they are not permitted to use any other animal than the frog. At most schools the students are carefully instructed in the great importance of the experimental method for the service of public health, and in the necessity of avoiding in every way the careless treatment of animals. At other schools this precautionary instruction is regarded as superfluous—a view easily understood by any one who knows the character of young men studying medicine, and who realizes the immense practical difficulties of private investigation. Until some respectable evidence is adduced to show that the much-maligned medical student actually does carelessly “cut up” living animals in his room, the evil suggestion that he does so should receive the contempt it deserves.

In spite of the accumulated evidence of a satisfactory condition of animal experimentation in this country, and in spite of the enforcement of the foregoing regulations in the laboratories, Pro-

fessor James's intimations of peaceful subsidence of the agitation must be regarded as much too optimistic. No end to the struggle for legal interference with medical research is in sight. Every year in one State or another a "mild bill" will be alluringly presented. Its ostensible purpose, as in the past, will be not to prevent "legitimate vivisection" by responsible investigators, but to stop the practice among the unskilled—for example, the medical student in his room. Examination of the bill will reveal, however, that no provision is made for spying on the medical student in his room, but that every arrangement is made for the inspection of the responsible investigators. To many fair-minded people inspection of laboratories and laboratory-work seems highly reasonable; they approve of going at least so far with the petitioners for legislation. But the medical profession has in the main objected to the proposed inspection. What are the reasons for the objection?

In the first place, inspection of laboratories would not satisfy those who are eager for legislative interference with research. England has had laboratory inspection for thirty-four years, yet there is no country in which the attack on laboratory procedures is more relentless. No less than fifteen anti-vivisection societies afflict Great Britain, all opposed to medical progress through the use of animals. Furthermore, if we may judge by English experience, the inspectors must describe "horrors" or be discredited. Inspection in England has not revealed any noteworthy abuse of animal experimentation during all the thirty-four years. The inference drawn by the anti-vivisectionists is that occasional inspection is futile; indeed, that, unless an inspector is in the laboratories continuously during all operations, horrible abuse of animals is sure to occur.\* The impossibility of providing for such constant oversight would seem to a person of common sense to necessitate a certain amount of reliance on the goodwill and natural humanity of those engaged in research. Again, the argument for inspection, usually supported by analogy with bank inspection, is, under the circumstances, quite faulty. For the inspection of banks experts in banking are appointed, but for the inspection of laboratories experts in experimentation have been definitely excluded in the bills presented by the opponents

\* See Minutes of Evidence, English Parliamentary Commission on Vivisection, 1905-6, Coleridge's testimony, *passim*.

of animal experimentation. For this important work they desire their own representatives. In the opinion of the experimenters, however, such persons, untrained in observing animal reactions and lacking any insight whatever into the extraordinary complexities of medical investigation, are thoroughly incompetent.

The incompetence of inspectors is the strongest objection to the proposal for State inspection. The laboratory-workers have spent many years learning what is known of the vital changes in living organisms. They are busied with a study of the most perplexingly developed structures and the most involved and entangled processes in nature, the structures and processes in highly organized animals. And not only are the individual processes intricate, but animals and plants are intricately related in the nexus of living beings. The most gifted insight is required, and the rarest type of constructive imagination, to distinguish in this complex the relations that are important from those that are unimportant. Precisely this high order of ability is a prime requisite in the hard human struggle against disease. Work that seems remote and academic may have the utmost value for the welfare of mankind. Lister's revolutionizing of surgical methods began with a study of fermentation in flasks and went thence to experiments on animals. In the early days of Lister's work even the physicians had no eyes for his view. How much less could be expected of the ignorant inspector! Surely Professor James was correct when he wrote: "The fear of State rules and inspectors, on the part of the investigators, is, I think, well founded; they would probably mean either stupid interference or become a sham."

Occasionally, at relatively rare intervals, the solution of an important problem may require that animals shall suffer. There are anti-vivisectionists who declare that they themselves prefer to suffer rather than to profit by procedures involving pain to animals. The enormous majority of men, however, are quite willing to do otherwise. As a matter of course, society tolerates crushing of limbs in traps, or other grievous wounding of birds and beasts, merely for ornamentation or sport. Even the delights of the palate are served through the infliction of pain, for men gladly consent to eat the capon and the steer, the taste of whose flesh has been made more delicate by barnyard operations of the most shocking character. The lashing of dogs driven to the last



extremity of fatigue and starvation was required to carry the flag to the at last accessible pole. How much more justifiable than any of these purposes is the motive that impels the medical investigator! Indeed, how much more justifiable than any of these inflictions of pain is the occasional suffering caused in the laboratories—for is not “the life more than meat and the body more than raiment”? Men and women and children, whose suffering extends to every one bound to them by the strong ties of love and sympathy, daily go down to death because the disease is a mystery and its cure unknown. Who, then, shall say that medical research shall not continue to bring its blessings? In the eager search for more light, who shall decide the critical case involving pain to animals? The anti-vivisectionists maintain that they should decide; the medical profession, on the contrary, urges that the decision remain in its control. The anti-vivisectionists, unacquainted with the problems and methods of medical research, prefer to restrict their humanity to the welfare of laboratory animals. The medical profession, realizing that more power to fight disease can only come from more knowledge, trusts the deeper humanity of the laboratory-workers who are seeking that knowledge. Should not the decision of the critical case rest preferably with the person of training and insight, the laboratory director? Of all men, he is most likely to know what is being done by those about him; he is most responsible to his institution, to his profession and to the public interest; and his position is itself a warrant of his trustworthiness.

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